

PROJECT NUMBER: 1704
PROJECT TITLE: Supercritical Fluid Processes
PROJECT LEADER: T. M. Howell
PERIOD COVERED: September, 1988

I. LOW NICOTINE

- A. Objective: Bermuda Hundred Pilot
- B. Results: Laboratory extractions were performed on DLIII blend and compared with extraction data from DLI and DLII. Results indicate that DLIII is similar to DLII in extraction with equivalent amounts of AB added. Initial nicotine concentration in CO₂ over blends II and III is somewhat higher than over blend I. Final nicotine concentrations over blends II and III drop below blend I at the end of the extraction even though the extraction levels are the same. Data indicate that blend I moderates changes in acid-base concentration better than blends II and III. Components, including bodied bright, thin bright, bodied burley and thin burley, of blend III were extracted, but a comparison with the DLI components could not be made because of limited data at the present extraction conditions. It was noted that the newest bodied bright had a lower nicotine concentration than the DLI bright.
- C. Plans: Continue obtaining extraction data on the blends and blend components in order to develop a data base for future comparisons and to provide information needed to further the basic understanding of the ART process.

II. LOW NICOTINE

- A. Objective: Understand solubility behavior of tobacco wax solubles in SC-CO₂.
- B. Results: An apparatus for studying the behavior of waxes in supercritical CO₂ at constant temperature and solubles-to-CO₂ ratio while varying pressure has been designed and fabrication is underway. This unit may provide information about saturation conditions of these constituents.
- C. Plans: This work is ongoing.

III. LOW NICOTINE

- A. Objective: Develop alternate on-line nicotine monitors for the ART process.
- B. Results: A shorter path-length cell for the CD instrument has been located and ordered. Further work with the instrument is limited to verification with manual sampling techniques until the cell is received and installed.
- C. Plans: This work is ongoing.

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